

What is claimed is:

1. A magnetic hard disk substrate comprising a substrate selected from the group consisting of aluminum substrates and glass substrates, said substrate having a surface, a radial direction being defined on said surface, said surface having texturing marks with a line density greater than 70 lines/ μm in said radial direction.

2. The magnetic hard disk substrate of claim 1 wherein said surface has an average surface roughness less than 0.5nm, the average of the ratio between the depth and pitch of said texturing marks being 0.02-0.2.

3. The magnetic hard disk substrate of claim 1 wherein said surface has an average surface roughness less than 0.5nm, the ratio between the depth and pitch of said texturing marks being 0.01-0.3, the average of said ratio being 0.02-0.2

4. A method of producing a magnetic hard disk substrate, said method comprising the steps of:

rotating in a specified direction a substrate selected from the group consisting of aluminum substrates and glass substrates, said substrate having a surface;

supplying polishing slurry on said surface; and

pressing a polishing tape on said surface and running said polishing tape in a direction opposite to said specified direction of rotation of said substrate;

wherein said polishing slurry comprises:

abrading particles with diameters in the range of 1-50nm, selected from the group consisting of monocrystalline diamond particles, polycrystalline diamond particles and cluster particles comprising monocrystalline and polycrystalline diamond particles; and

a dispersant for said abrading particles selected from the group consisting of water and water-based aqueous solutions;

wherein texturing marks with a line density greater than 70 lines/ μm in a radial direction are formed on said surface.

5. The method of claim 4 wherein said polishing slurry further comprises agglomerated cluster particles comprising said cluster particles that are agglomerated in said dispersant.

5 6. The method of claim 4 wherein said polishing slurry contains said abrading particles by 0.01 weight % or more of the total weight of said polishing slurry.

7. The method of claim 4 wherein said polishing slurry contains said abrading particles by 0.01-3 weight % of the total weight of said polishing slurry.

10

8. The method of claim 4 wherein said polishing slurry contains said abrading particles by 0.01-1 weight % of the total weight of said polishing slurry.

9. The method of claim 4 wherein said water-based aqueous solution is an aqueous solution having an additive added to water, said additive comprising one or more selected from the group consisting of non-ionic surfactants, organic phosphoric acid esters, higher fatty acid amides, glycol compounds, higher fatty acid metallic salts, amine salts of vegetable oils and fats and anionic surfactants.

10 10. The method of claim 9 wherein said additive is 1 - 10 weight % of the total weight of said polishing slurry.

11. The method of claim 4 wherein said polishing tape is of a material selected from the group consisting of woven cloth, unwoven cloth, flocked cloth, raised cloth and foamed materials.

25

12. The method of claim 11 wherein said woven cloth, said unwoven cloth and said raised cloth comprise microfibers.

13. The method of claim 11 wherein said flocked cloth has microfibers planted and said raised cloth has microfibers that are raised.

30

14. The method of claim 12 wherein said microfibers have a thickness in the range of 0.1-5 μ m.

5 15. The method of claim 13 wherein said microfibers have a thickness in the range of 0.1-5 μ m.

16. The method of claim 11 wherein said foamed material has a surface with indentations formed by air bubbles, said indentations have diameters in the range of 0.1-
10 5 μ m.